

REMARKS

Claims 1-28 are pending in this application.

Applicants thank the examiner for a acknowledging consideration of the references submitted in the information disclosure statements filed on November 26, 2003 and July 15, 2004, as evidenced by the signed and initialed Form PTO-1449. Reconsideration and allowance of the rejected claims are respectfully requested.

***Claim Rejection under 35 USC 102***

Claims 1-2, 4, 5, 11-13, 15, 18-19, 22-25, 27-28 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,998,069 (Cutter et al.). Applicants respectfully traverse this rejection.

Independent claims 1, 12, 18, and 23 recite, among other things, a layer of solid state electro-optical material having a birefringence that varies according to an applied voltage. According to one embodiment of the invention, solid state electro-optical materials provide several benefits over liquid crystal electro-optical materials, including at least reduced degradation in the presence of UV and DUV radiation, faster switching rates, and smaller dimensions for the electro-optical devices (see the specification at page 16, paragraph 00058)..

By contrast, Cutter et al. discloses an electronically controlled mask that is a liquid crystal display and not a solid state electro-optical material (see Cutter et al., col. 6, line 66 to col. 7, line 10). As a result, Cutter et al. is deficient at least because it fails to teach or suggest a layer of solid state electro-optical material. Additionally, Cutter et al. fails to disclose that the liquid crystal display has a birefringence that varies according to an applied voltage. Rather, Cutter et al. discloses rearranging or switching the polarization of the liquid crystal molecules so that light is either reflected or absorbed in the region bound by the electrodes (see Cutter et al., col. 7, line 6-10). As is generally known, birefringence includes the division of light into two components, ordinary and extraordinary.

Since Cutter et al. neither discloses nor suggests the invention claimed in independent claim 1 and its dependent claims 2, 4, 6, 11, or the invention claimed in independent claim 12 and its dependent claims 13, 15, or the invention claimed in independent claim 18 and its dependent claims 19, 22, or the invention claimed in independent claim 23 and its dependent claims 24, 25, 27, 28, these claims clearly are not anticipated by Cutter et al. For at least the foregoing reason, reconsideration and allowance of these claims are requested.

***Claim Rejections under 35 USC 103***

Claims 3, 5, 9, 14 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,998,069 (Cutter et al.) in view of U.S. Patent Application Publication No. 2003/0076423 (Dolgoﬀ). Applicants respectfully traverse this rejection.

Claims 3, 5, 9 and 14 depend from corresponding independent claims 1 and 12 and therefore include the feature of, among other things, a layer of solid state electro-optical material having a birefringence that varies according to an applied voltage.

As discussed above, Cutter et al. is deficient at least because it discloses an electronically controlled mask that is a liquid crystal display and not a solid state electro-optical material (see Cutter et al., col. 6, line 66 to col. 7, line 10). The Examiner acknowledges that Cutter et al. is further deficient because it fails to disclose the electro-optical material recited in dependent 3, 5, 9, and 14. The examiner relies on Dolgoﬀ for disclosing this feature.

Dolgoﬀ is directed to a light valve such as an active liquid crystal display (LCD) between crossed polarizers, utilizing individual transistors to control each pixel area of the LCD (see Dolgoﬀ, the abstract). Since Dolgoﬀ is directed to an LCD, it fails to make up the deficiencies of Cutter et al. discussed above. In particular, Dolgoﬀ fails to teach or suggest at least a layer of solid state electro-optical material. Thus, Cutter et al. and Dolgoﬀ remain deficient, both alone and in combination.

In view of the foregoing differences between claims 3, 5, 9, 14 and the cited art, applicants respectfully submit that the examiner has failed to establish a prima facie case of obviousness based on Cutter et al. in view of Dolgoﬀ.

Claims 7-8, 16, 20, and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,998,069 (Cutter et al.) in view of U.S. Patent Application Publication No. 2002/0112824 (Ballard et al.). Applicants respectfully traverse this rejection.

Claims 7, 8, 16, 20 and 26 depend from corresponding independent claims 1, 12, 18 and 23 and therefore include the feature of, among other things, a layer of solid state electro-optical material having a birefringence that varies according to an applied voltage.

As discussed above, Cutter et al. is deficient at least because it discloses an electronically controlled mask that is a liquid crystal display and not a solid state electro-optical material (see Cutter et al., col. 6, line 66 to col. 7, line 10). The Examiner acknowledges that Cutter et al. is further deficient because it fails to disclose an actuator configured to adjust the position of the electro-optical material in a direction parallel to the

beam of the radiation incident on the pixel element. The examiner relies on Ballard et al. for disclosing this feature.

Ballard et al. is directed to an apparatus for mounting a pellicle to a reticle (see Ballard et al., the abstract). Ballard et al. fails to disclose solid state electro-optical materials or any other type of electro-optical materials. Thus, Cutter et al. and Ballard et al. remain deficient, both alone and in combination.

In view of the foregoing differences between claims 7, 8, 16, 20, 26 and the cited art, applicants respectfully submit that the examiner has failed to establish a prima facie case of obviousness based on Cutter et al. in view of Ballard et al.

Claims 10 and 17 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,998,069 (Cutter et al.) in view of U.S. Patent No. 5,682,214 (Amako et al.). Applicants respectfully traverse this rejection.

Claims 10 and 17 depend from corresponding independent claims 1 and 12 and therefore include the feature of, among other things, a layer of solid state electro-optical material having a birefringence that varies according to an applied voltage.

As discussed above, Cutter et al. is deficient at least because it discloses an electronically controlled mask that is a liquid crystal display and not a solid state electro-optical material (see Cutter et al., col. 6, line 66 to col. 7, line 10). The Examiner acknowledges that Cutter et al. is further deficient because it fails to disclose a polarizing filter to attenuate the radiation outgoing from the pixel elements. The examiner relies on Amako et al. for disclosing this feature.

Amako et al. is directed to an optical apparatus for controlling a wave front of a coherent light including at least a coherent light source, an electrically addressable liquid crystal device having a plurality of pixels receiving the light from the light source and a signal generator (see Amako et al., the abstract). Amako et al. discloses a liquid crystal display but fails to disclose solid state electro-optical material. Thus, Cutter et al. and Amako et al. remain deficient, both alone and in combination.

In view of the foregoing differences between claims 10, 17 and the cited art, applicants respectfully submit that the examiner has failed to establish a prima facie case of obviousness based on Cutter et al. in view of Amako et al.

Based on the foregoing amendments and remarks, the examiner is respectfully requested to indicate the allowance of claims 1-28.

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Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

PILLSBURY WINTHROP SHAW PITTMAN LLP

A handwritten signature in black ink, appearing to read 'Sean L. Ingram', with a long horizontal flourish extending to the right.

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